

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

U. S. FOREST SERVICE

Pacific
North
West

Research Note

FOREST AND RANGE EXPERIMENT STATION · U.S. DEPARTMENT OF AGRICULTURE · PORTLAND, OREGON

PNW-25

June 1965

VARIATION IN VEGETATION FOLLOWING SLASH FIRES NEAR OAKRIDGE, OREGON

By

Harold K. Steen

The following photographic sequences illustrate how vegetation differed following slash fires on two logged areas 9 miles apart. As part of a regional study to determine effects of slash burning,^{1/} two pairs of plots were established on the Willamette National Forest near Oakridge, Oreg. Both areas were clearcut in 1949, and the slash was burned in October of the same year. One plot of each pair was burned along with the rest of the logging unit; the unburned plot in each pair was adjacent to the burned plot and provided a control for comparison of fire effects. The two pairs of plots shown here were selected from 13 in the Oakridge vicinity because of the obvious differences in plant cover. These differences are typical of the Oakridge vicinity.

^{1/} Morris, William G. Influence of slash burning on regeneration, other plant cover, and fire hazard in the Douglas-fir region (a progress report). U.S. Forest Serv. Pac. NW. Forest & Range Expt. Sta. Res. Paper 29, 49 pp., illus. 1958.



UNBURNED

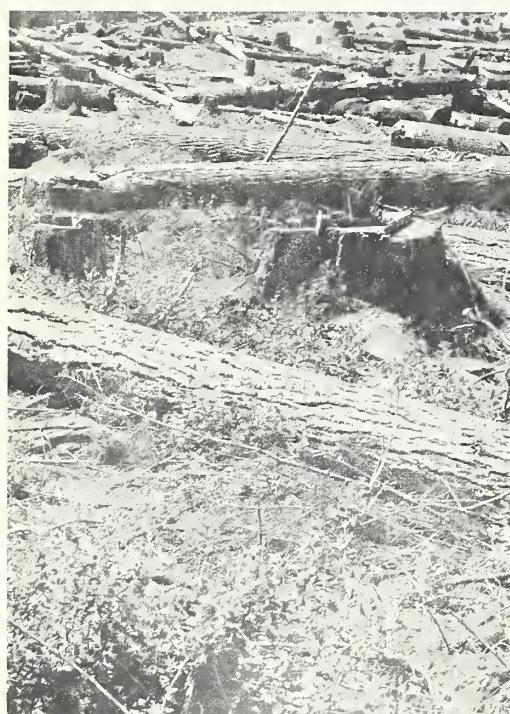


PAIR A

BURNED

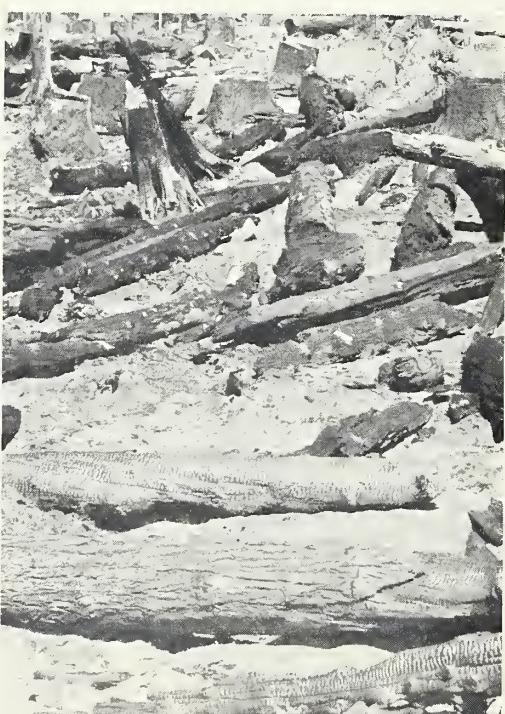


FIGURE 1---These photographs were taken in midsummer 1950, or during the first growing season following burning. Unburned plats have a little trailing blackberry, starflower, Pacific rhododendron, and vine maple. Two percent of burned A and 23 percent of burned B had a hard burn (organic material destroyed and some soil carbonation). One of these hard-burned spots may be seen in the lower right of burned A (arrow). Vine maple may be seen in the foreground of unburned B; in the background is a burned portion of the lagging unit.



UNBURNED

PAIR B



BURNED



UNBURNED



PAIR A

BURNED

FIGURE 2.--Two growing seasons since the slash fire, there are some differences both between and among pairs. Unburned A has changed little in 1 year and burned A has some groundsel, trailing blackberry, and Cascades mahonia (locally called Oregon grape). On unburned B, groundsel, trailing blackberry, and vine maple are readily visible; on burned B, groundsel forms a dense cover as contrasted to a light cover on A.



UNBURNED

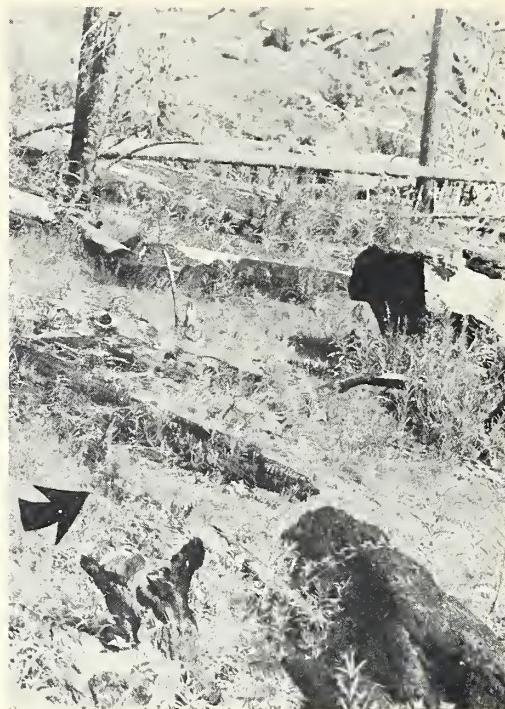
PAIR B



BURNED



UNBURNED



PAIR A

BURNED

FIGURE 3.--In the fourth growing season, vine maple and willowweed (locally called fireweed) are seen on unburned A, and groundsel replaced by willowweed, trailing blackberry, and madest whipplea on burned A. Douglas-fir seedlings are just visible (arrows) on both the burned and unburned plots. Vine maple and willowweed are dominant on unburned B. On burned B, ceanathus (probably bath varnishleaf and snowbrush), blueberry elder, peovine, willowweed, and groundsel have replaced the heavy cover of groundsel found 2 years previously.



UNBURNED

PAIR B



BURNED



UNBURNED



PAIR A

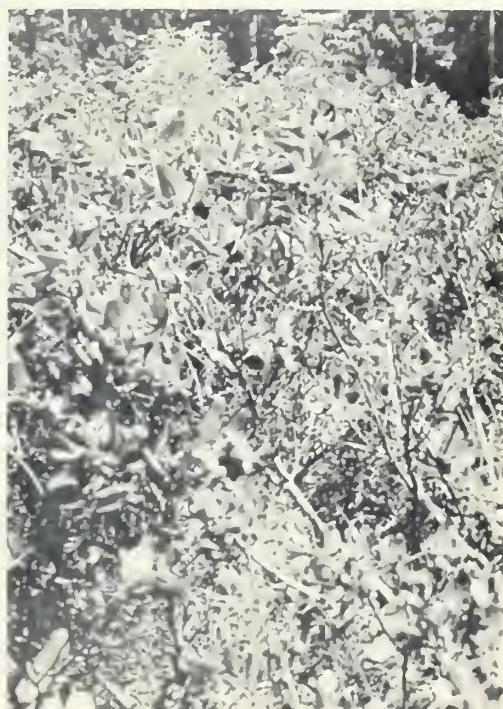
BURNED

FIGURE 4...By the 13th growing season, the Douglas-fir seedlings, which were barely visible in figure 3, are now of sapling size. Ninety-two-percent stocking by natural conifers occurs on unburned A (determined by 4-milacre subplot examinations) and 100-percent on burned A. Cascades mahogany and vine maple on unburned A and western hemlock and modest whipplea on burned A may be seen in the photographs. The hard-burned spot is still evident in the lower right of burned A (arrow), showing that severe burns may have long-term effects. Plot B is brushy with vine maple covering the unburned plot and ceanothus the burned plot. There are about one-third as many conifer seedlings on unburned B as on unburned A, and two-thirds as many seedlings on burned B as on burned A.

UNBURNED

PAIR B

BURNED



SUMMARY

Typical variation in vegetation following slash burning is shown by comparison of paired photographs of two areas in the same locality. Except for vine maple on pair B, both pairs of burned and unburned plots were apparently similar initially. The second growing season after burning, groundsel formed a much heavier cover on burned B than on burned A. During the fourth growing season, several herbaceous species grew on burned A while burned B was invaded by brush. Thirteen years after the slash fire, the two pairs showed marked differences; conifers were well established on pair A while heavy brush covered pair B. These variations in vegetation following slash fires illustrate the predicament faced by the forest-land manager when deciding whether or not to use slash burning as a management tool.

GLOSSARY OF COMMON AND SCIENTIFIC NAMES

Blueberry elder	<i>Sambucus glauca</i>
Cascades mahonia	<i>Mahonia nervosa</i>
Douglas-fir	<i>Pseudotsuga menziesii</i>
Fireweed	<i>Epilobium angustifolium</i>
Groundsel	<i>Senecio spp.</i>
Modest whipplea	<i>Whipplea modesta</i>
Pacific rhododendron	<i>Rhododendron macrophyllum</i>
Peavine	<i>Lathyrus spp.</i>
Snowbrush ceanothus	<i>Ceanothus velutinus</i>
Trailing blackberry	<i>Rubus macropetalus</i>
Varnishleaf ceanothus	<i>Ceanothus velutinus var. laevigatus</i>
Vine maple	<i>Acer circinatum</i>
Western bracken	<i>Pteridium aquilinum var. pubescens</i>
Western starflower	<i>Trientalis europaea var. latifolia</i>
Willowweed	<i>Epilobium spp.</i>